

CLAIMS

Now, therefore, the following is claimed:

1. A system for controlling a temperature of a liquid residing within a tank,
5 comprising:
 - a temperature sensor configured to detect the temperature of the liquid;
 - a temperature control element configured to alter the temperature of the liquid;
 - a clock; and
 - logic configured to automatically select a temperature threshold based on a time
10 value indicated by the clock and to perform a comparison between the selected
temperature threshold and the temperature detected by the temperature sensor, the logic
further configured to control the temperature control element based on the comparison.
2. The system of claim 1, wherein the temperature control element comprises
15 a heating element.
3. The system of claim 1, wherein the temperature control element comprises
a cooling element.

4. The system of claim 1, wherein the logic is further configured to detect a
length of time that the temperature detected by the temperature sensor remains within a
specified temperature range, the logic configured to control the temperature control
element, in response to a determination that the length of time exceeds a threshold, such
5 that the temperature control element causes the detected temperature to increase above a
threshold for a sufficient amount of time to ensure that bacteria within the tank is
substantially killed.

10 5. The system of claim 1, wherein the logic is configured to select said
temperature threshold based on a plurality of temperatures detected by a plurality of
temperature sensors.

15 6. The system of claim 1, wherein the logic is configured to automatically
generate data indicative of a usage history of the tank, the logic further configured to
automatically select the threshold based on the data.

20 7. The system of claim 6, wherein the logic is configured to activate and
deactivate the temperature control element based on the temperature threshold and
another temperature threshold, thereby providing an activation hysteresis for the
temperature control element, the logic further configured to change the activation
hysteresis based on the data.

8. The system of claim 1, wherein the logic is configured to determine a value indicative of an amount of the liquid drawn from the tank during a particular time period, the logic further configured to select the temperature threshold based on the value.

5 9. The system of claim 8, wherein the logic is configured to determine a total amount of time that the temperature control element is activated during the particular time period and to determine the value based on the total amount of time.

10. 10. The system of claim 8 wherein the logic is configured to determine the value based on the temperature detected by the temperature sensor.

11. 11. A system, comprising:
a tank;
a temperature sensor configured to detect a temperature of a liquid residing within
15 the tank;
a temperature control element coupled to the tank;
memory for storing data indicative of a usage history of the tank; and
logic configured to automatically control the temperature control element based
on the data.

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12. 12. The system of claim 11, wherein the data is input via a user of the system.

13. The system of claim 11, wherein the logic is configured to monitor a usage
of the tank over time in order to define the data.

14. The system of claim 11, wherein the logic is configured to monitor the
5 temperature control element in order to define the data.

15. The system of claim 11, wherein the logic is configured to monitor the
temperature sensor in order to define the data.

10 16. The system of claim 11, wherein the logic is configured to ensure that the
temperature control element is periodically controlled such that an amount of bacteria
within the tank remains within a desired range.

15 17. The system of claim 11, further comprising a second temperature control
element, wherein the logic is configured to control the second temperature control
element and to perform a verification that the second temperature control element is
actually activated when the logic attempts to activate the second temperature control
element, and wherein the logic is configured to automatically define the usage history
based on the verification.

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18. The system of claim 11, wherein the logic is configured to define the data
based on a plurality of temperatures sensed by a plurality of temperature sensors.

19. The system of claim 11, wherein the logic is configured to control the temperature control element such that the temperature control element has an activation hysteresis, the logic configured to change the activation hysteresis based on the data.

5 20. The system of claim 19, wherein the logic is configured to decrease the hysteresis in response to a prediction that a high usage event associated with the tank is imminent.

10 21. The system of claim 11, wherein the the temperature control element comprises a heating element.

15 22. A system, comprising:
a tank;
a temperature sensor coupled to the tank;
a temperature control element for controlling a temperature of a liquid residing within the tank; and
logic configured to determine a value indicative of an amount of the liquid drawn from the tank during a first time period and to establish a temperature threshold for a second time period based on the value, the logic configured to perform a comparison between the temperature threshold and a temperature of the liquid detected by the temperature sensor during the second time period, the logic further configured to control the temperature control element based on the comparison.
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23. The system of claim 22, wherein the logic is configured to determine a total amount of time that the temperature control element is in an activation state during the first time period, wherein the value is based on the total amount of time.

5 24. The system of claim 22, wherein the logic is configured to determine the value based on a temperature detected by the temperature sensor.

25. The system of claim 22, wherein the logic is further configured to change an activation hysteresis for the temperature control element based on the value.

10 26. The system of claim 22, wherein the logic is further configured to ensure that the temperature control element is periodically controlled such that the temperature of the liquid remains at a sufficiently high level for a sufficient amount of time for preventing an amount of bacteria within tank from exceeding a desired level.

15 27. The system of claim 22, further comprising a second temperature control element, wherein the logic is configured to control the second temperature control element and to perform a verification that the second temperature control element is actually activated when the logic attempts to activate the second temperature control element, and wherein value is based on the verification.

20 28. The system of claim 22, wherein the value is based on temperatures detected by a plurality of temperature sensors.